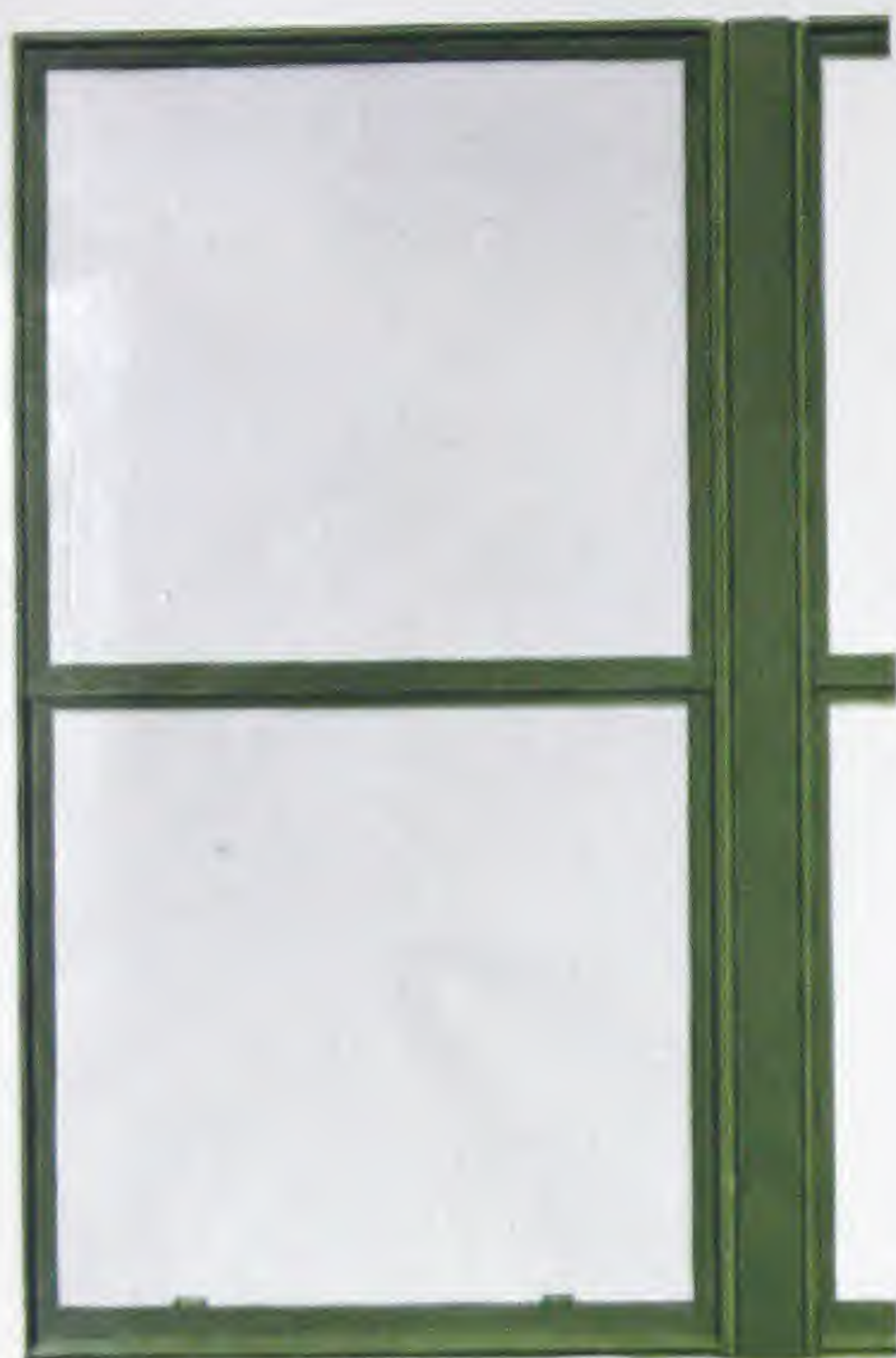


## Supplied in Double Hung or Casement Types



Outside View of Double Hung Type  
with Mullion

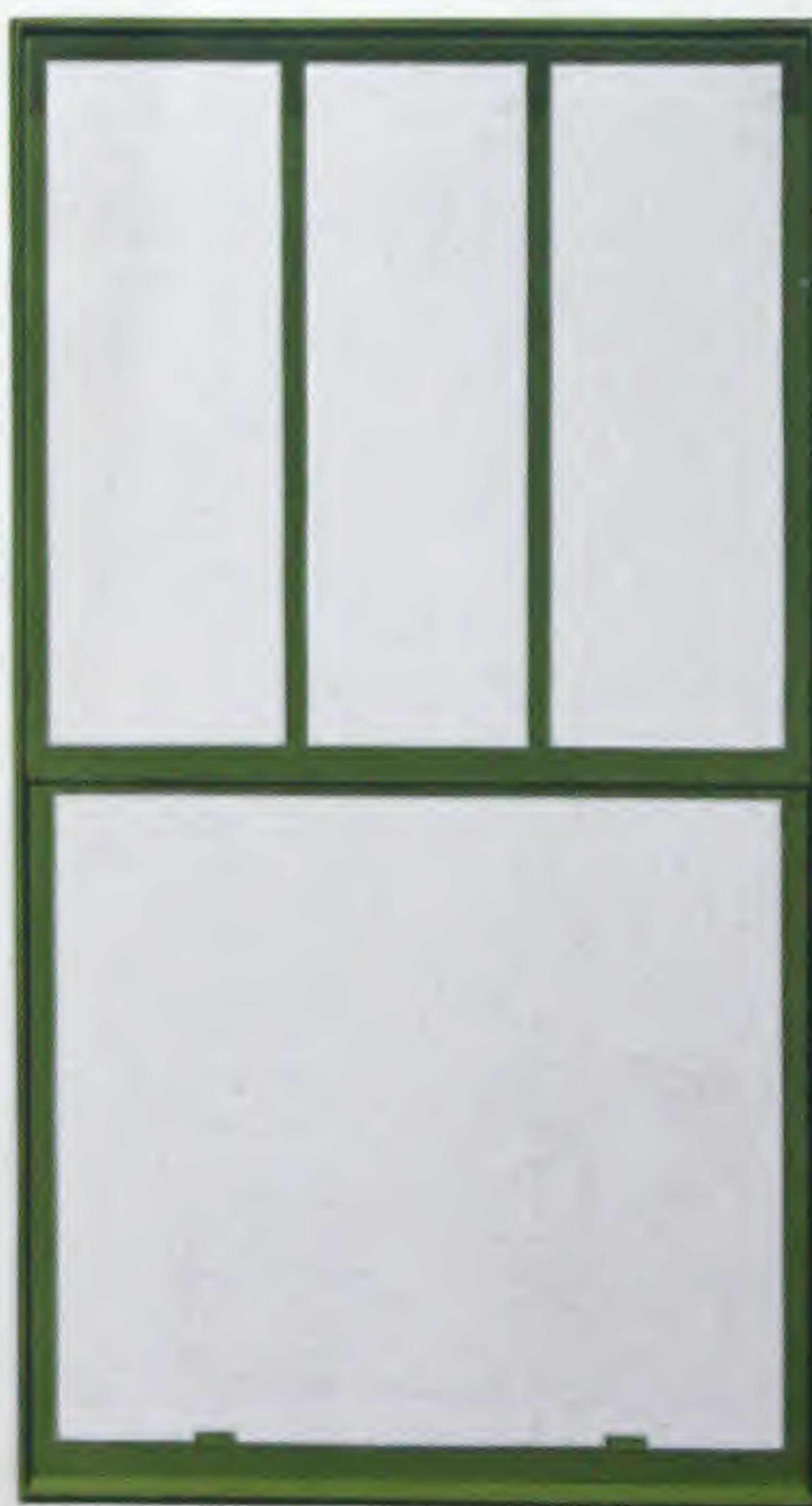
KAWNEER Solid Nickel-Silver Windows are offered in both the standard double hung styles or in out-swinging casements. Practically any style of either general type may be had. The double hung windows are offered with full sash, with muntins, or in groups with mullions of corresponding metal.

~ ~

Kawneer windows are shipped with frame and sash assembled and with all finished hardware attached. All the parts such as weights, interior hardware, pulleys and cables or chains are included. The lifts and catch are of special design, the latter being formed so that it draws the upper and lower sash tight with a vertical and horizontal action. Everything about Kawneer Windows is completed at the factory, excepting the actual installations, the hanging of the weights and glazing.



Outside View of Double Hung Type  
with Single Lights



Outside View of Double Hung Type  
with Muntins



Outside View of Double Hung Type with  
Muntins and Cross Bars



## Made to Architectural Sizes in Various Styles

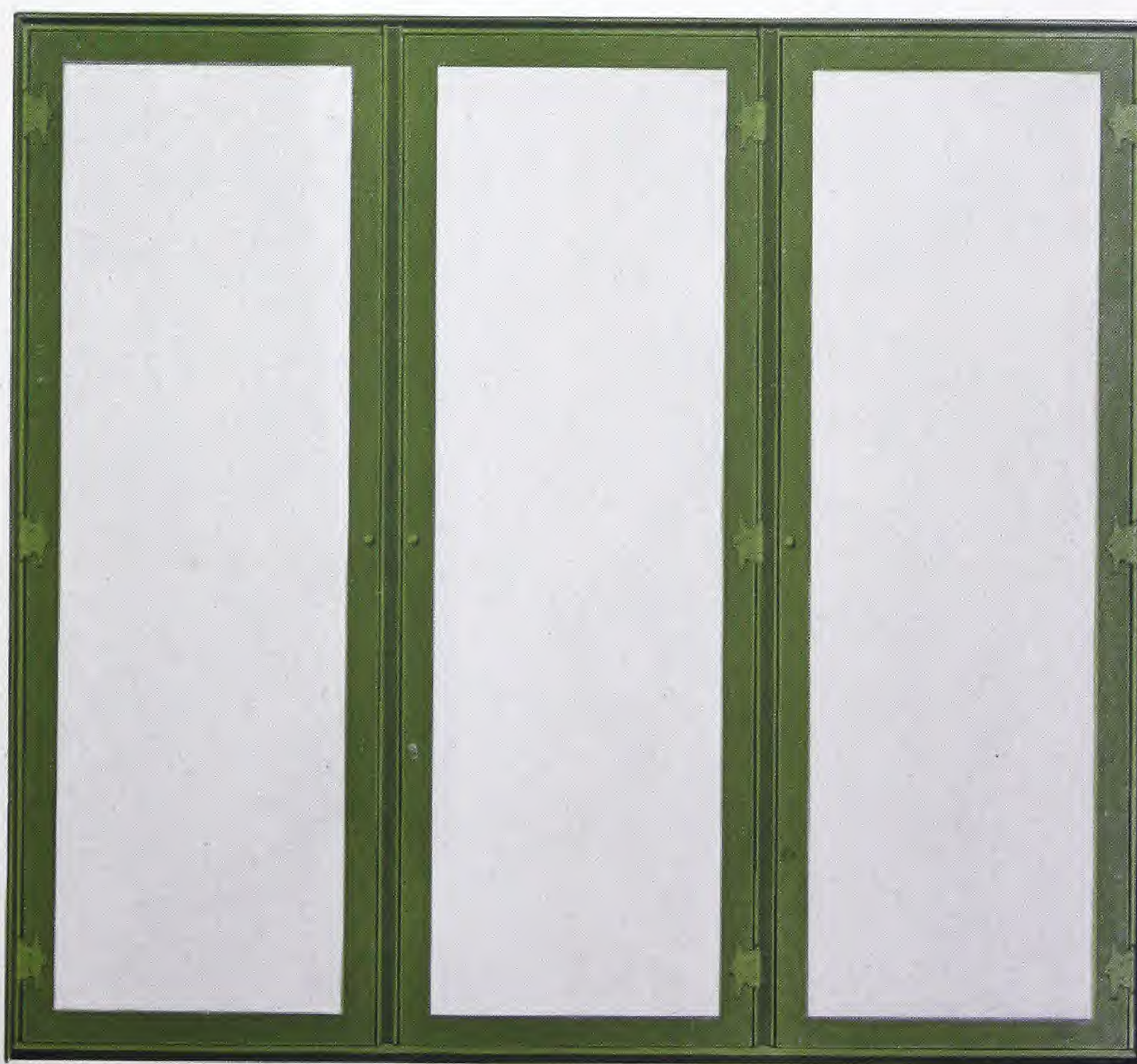
**K**AWNEER Out-Swinging Casements may be had to fit most modern architectural requirements. They are offered in single or double sash, with or without transoms (either stationary or hinged at the top, opening outward). They are made with muntins, if desired, in either sash or transoms or both. Kawneer Casements may also be had in multiples of two sash by the use of specially designed metal mullions. Special arrangements of casements, such as having three sash, the center sash being stationary, or other special combinations, may be had if desired. Kawneer Windows are fabricated to architectural sizes, to fit the masonry wall openings. Models of both types of windows made of full-size sections will gladly be shown upon request.



Outside View, Two Sash Casement Type with Transom



Outside View, Two Sash Casement Type with Muntins



Outside View, Three Sash Casement Type with Mullions

ALL JOINTS STRONGLY WELDED



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CCA



78-4.

# Kawneer

## WINDOWS

IN SOLID NICKEL SILVER OR COPPER

FOR COMMERCIAL BUILDINGS









# Kawneer

## WINDOWS

*In*

SOLID NICKEL - SILVER

*Made from*

Heavy Cold Rolled Metal Mouldings

All Joints Welded



THE  
**Kawneer**  
COMPANY

Niles, Michigan



## Kawneer Windows Are Built For Permanency

**P**ERMANENCY has always been the true objective of the architectural profession. Working upon the basic axiom that the best is eventually the cheapest, architects and builders have been striving to find a way to make buildings permanent in all their essential features. The "sky scrapers" that have been built but comparatively a few years, have already demonstrated that, while stone, brick work and reinforced concrete are practically permanent, windows made of wood or steel require almost yearly attention to keep them from deteriorating.

### PERMANENCY

When we build let us think that we build forever. Let it not be for present delight nor for present use alone. Let it be such work as our descendants will thank us for, and let us think as we lay stone on stone, that a time is to come when those stones will be held sacred because our hands have touched them, and men will say as they look upon the labor and wrought substance of them, "See! This our fathers did for us."

—John Ruskin

the first features in the exterior of large buildings to show the ravages of age.

It is to meet this demand for permanency that the new Kawneer Windows are made of metals that have stood the test of centuries against rust and deterioration.

Nickel - silver — a trade name applied to an alloy of nickel, copper and other semi-precious metals—is recognized as a superior metal because of its strength, attractive color and non-rusting qualities. Hundreds of years before King Tut's time, copper had been tested and proven a strong, useful and permanent metal.

It has been found that windows made of such materials must be painted at least every three or four years to prevent them from rotting or rusting. But even then the past 30 years has demonstrated that frequent painting does not adequately preserve windows made from wood or iron and that such windows are one of

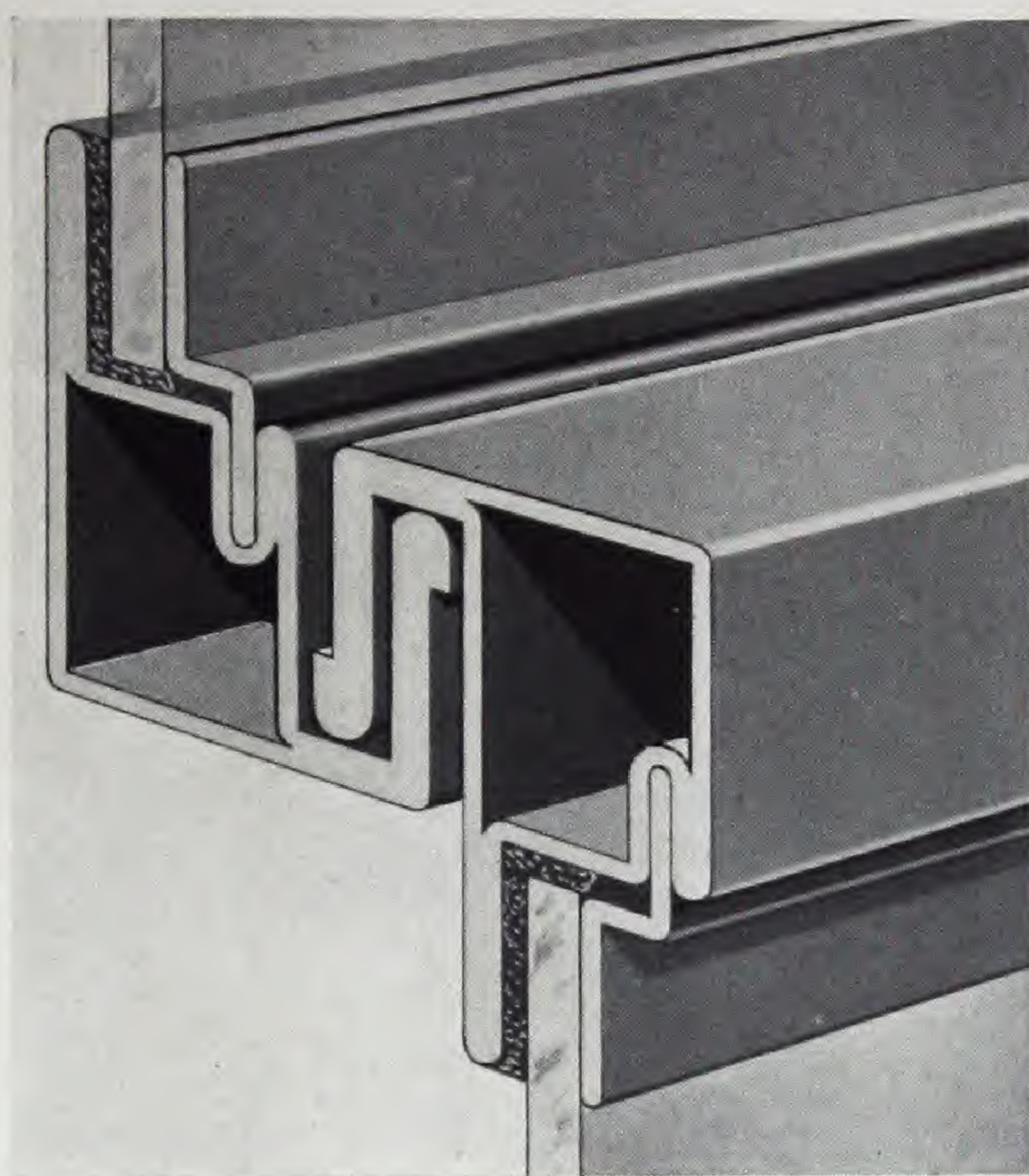
Nickel-silver is more suitable for our purpose than copper, bronze or brass because of its greater strength and stiffness, its higher fusion temperature, the beautiful olive green color it takes on when oxidized by the atmosphere and because it welds even stronger than the metal itself.



## Made From Heavy Gauge Cold Rolled Mouldings

AS THE creators and largest manufacturers of mouldings used in modern solid copper store front work, The Kawneer Company has constructed special machines for accurately forming metal mouldings. These machines operate on what is known as the "cold rolling" process. On these special, Kawneer built machines we are able to produce mouldings in various metals which have sharp true lines and curves that are so necessary to carry out the exacting requirements of the better class of architectural work. It is on these machines that the various shapes required in the new Kawneer Windows are produced.

It has been realized, of course, that windows play an important part in the general design of any building, whether a home, a hospital, office or public building. So, special care has been exercised to shape the various mouldings needed for Kawneer Window construction, that when the finished frame and



Section at Meeting Rail (Double Hung Type)

sash are assembled, our windows have beauty as well as permanency and sturdy strength.

Although Kawneer Windows have several new features, architects will find them quite standard in design and in their adaptation to various kinds of building work. We have kept as nearly as possible to the traditional and accepted architectural

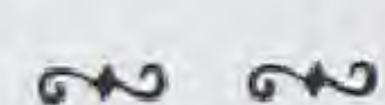
designs in both the double hung and casement types in producing the new Kawneer Windows.

Our object has not been to attempt any radical departures in the form of construction or the method of operation, but to produce both double hung and casement windows better than they have been made before. By better we mean, windows that at all times operate easily without regard to temperature or moisture, that permit more light and ventilation area considering the size of the masonry opening, that are more weather tight and as permanent as the masonry of a modern building.

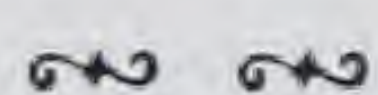


## All Joints are Mitered and Strongly Welded

NEXT in importance to permanency of materials and beauty of design is sturdiness of construction, for upon this feature depends the reliability of the service to be obtained from any window.



Kawneer Windows are constructed by first cutting the cold rolled mouldings to length, mitering or coping them to an exact fit and then securely welding every joint. This process gives the desirable qualities of snug fit, backed by the sturdy strength of continuous members in each sash and frame.



Welding all corners eliminates the necessity for bolts or rivets and adds to the rigidity of each sash and frame.

The gauge of metal used in every part of Kawneer Windows is heavy so that



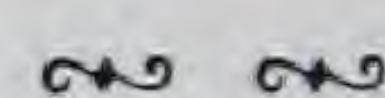
Strongly Welded Joints.

with ordinary usage it will not dent nor warp.

This sturdy strength of the metal itself is augmented at all corners by the securely welded joints.

The welding operations on Kawneer Windows are done by the oxy-acetylene process, the mitered mouldings being held to fit in specially con-

structed jigs (which insures accuracy of size and proper fusion of metal). After welding, the joints are ground, cleaned and polished.

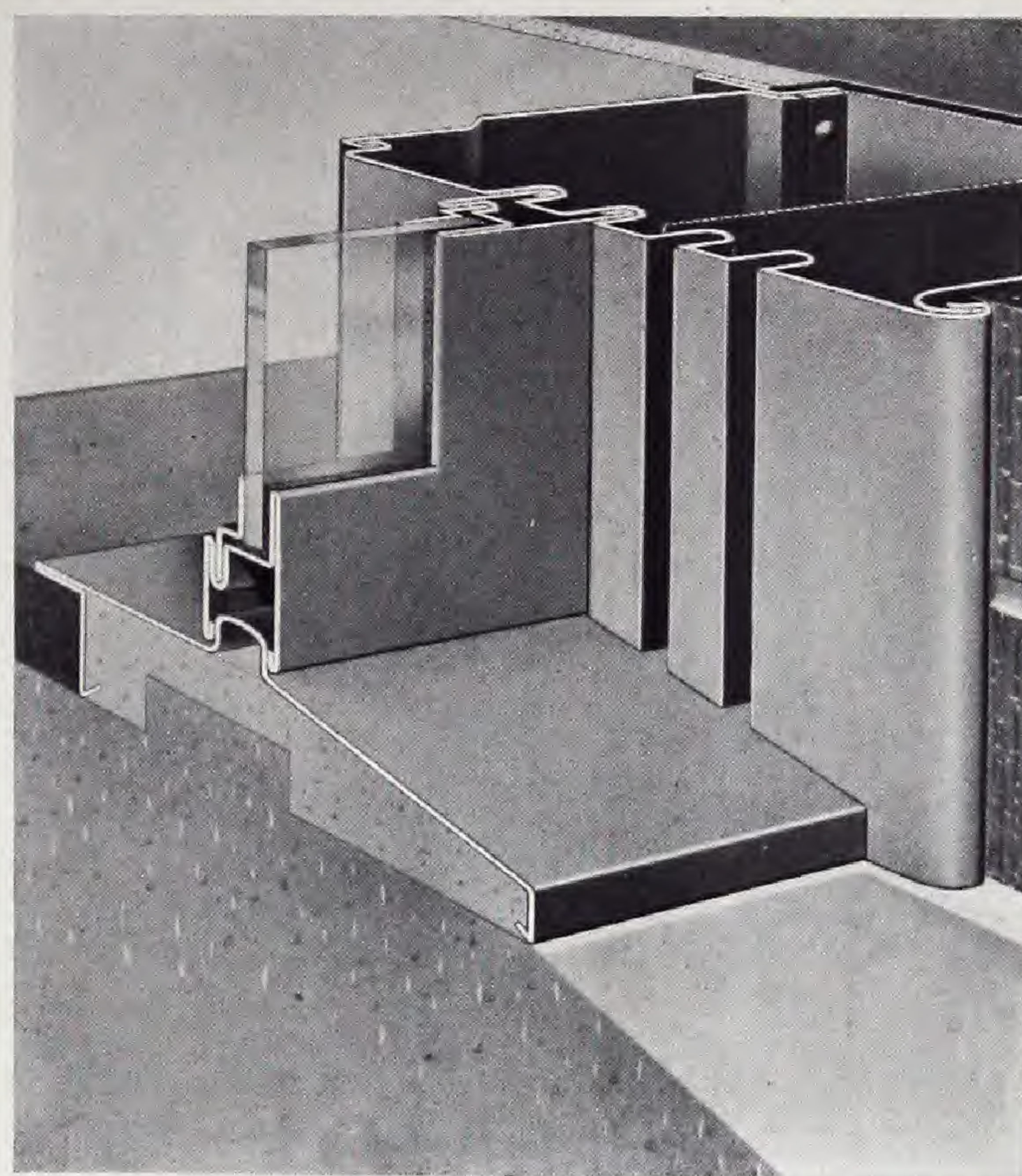


Attention is called to the fact that the *welding* rather than *brazing* process is used in making all joints on Kawneer Windows. The brazing process is practically the same as soldering for in it a softer metal is melted to make the joint. However, in the welding process the nickel-silver itself is fused together.



## Sturdy but Compact Members Give Maximum Glass Area

**B**ECAUSE of the sturdy but compact members used in Kawneer Sash and Frames, the glass or light area per wall opening is much greater than in standard wood or hollow metal construction. The frame members for both the casement and double hung windows are shallow. With the double hung windows, when the lower sash is raised or the upper sash lowered, the entire width of the masonry opening less only three-eighths of an inch at each jamb is open for light and ventilation. The frame showing but three-eighths of an inch inside the masonry, forms a mere "line" that has a very neat appearance from both the outside and the inside of the building.



View of Jamb, Sill and Sash (Double Hung Type)

Note, also, how compact the sash rails are on both types of windows. The usual wood construction takes up about 4 to 5 inches of the wall opening at each side for the frame and sash rails. In the new Kawneer double hung type but 1 1/2

inches in width is used at each side which effects a total saving of light area of from 5 to 7 inches in width and approximately the same amount in height per opening. In the casement only 3 inches is required on each side for the frame jamb and sash rail. This extra 5 to 7 inches in difference between the frame and sash members of wooden windows as compared

with the new Kawneer Window construction when computed, for a wall opening 3 feet 6 inches wide by 7 feet high amounts to about 5 1/2 square feet of extra light area provided by the Kawneer Double Hung Windows.

As explained on previous pages, this extra glass area is obtained without sacrificing strength, rigidity or serviceability. The heavy gauge metal, the specially designed mouldings having the metal rolled back on itself, the welding of all corners and other features combine to make possible the sturdy compactness that permits this large amount of extra glass area.



## Supplied in Double Hung or Casement Types

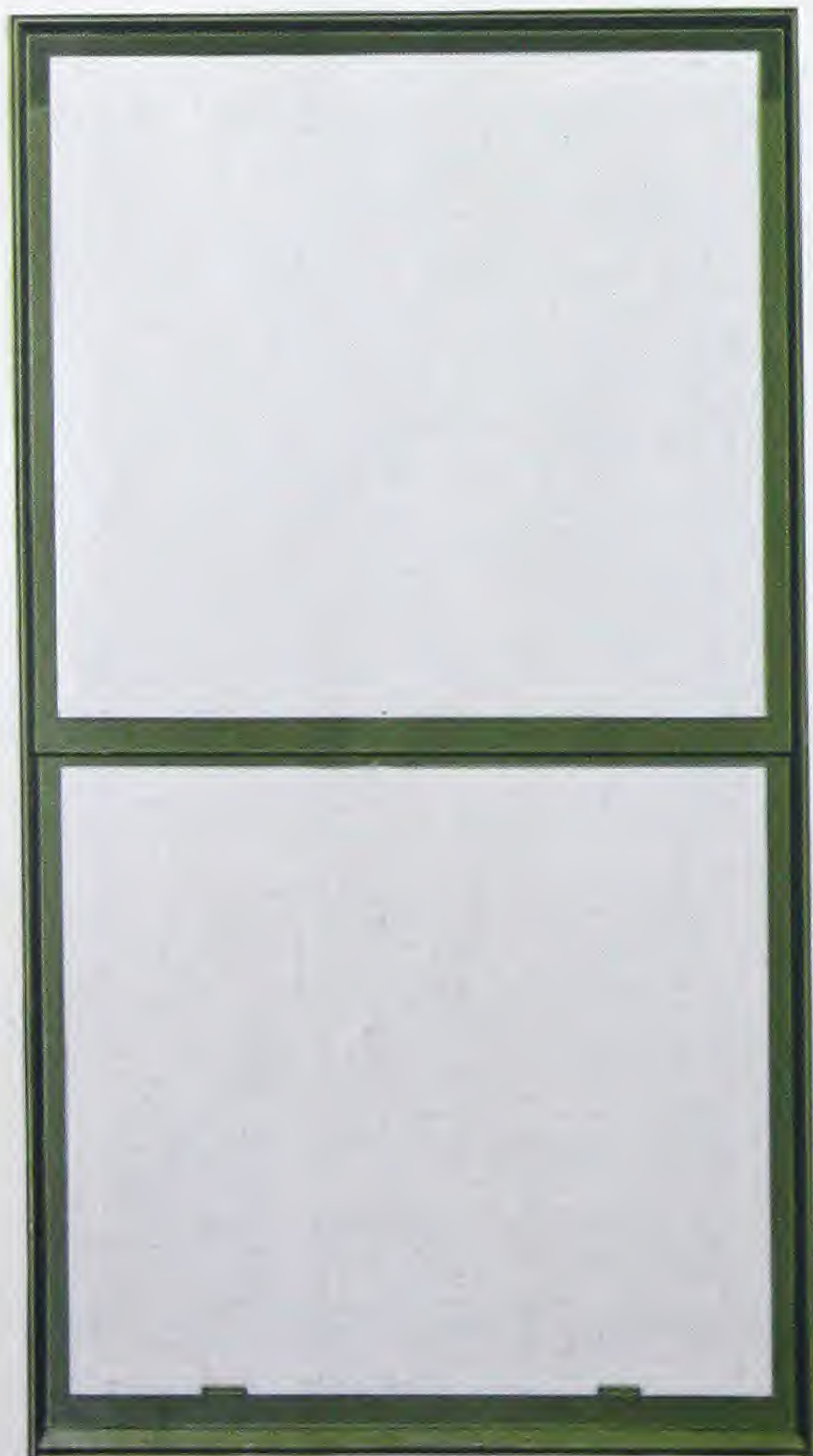


Outside View of Double Hung Type  
with Mullion

**K**AWNEER Solid Nickel-Silver Windows are offered in both the standard double hung styles or in out-swinging casements. Practically any style of either general type may be had. The double hung windows are offered with full sash, with muntins, or in groups with mullions of corresponding metal.

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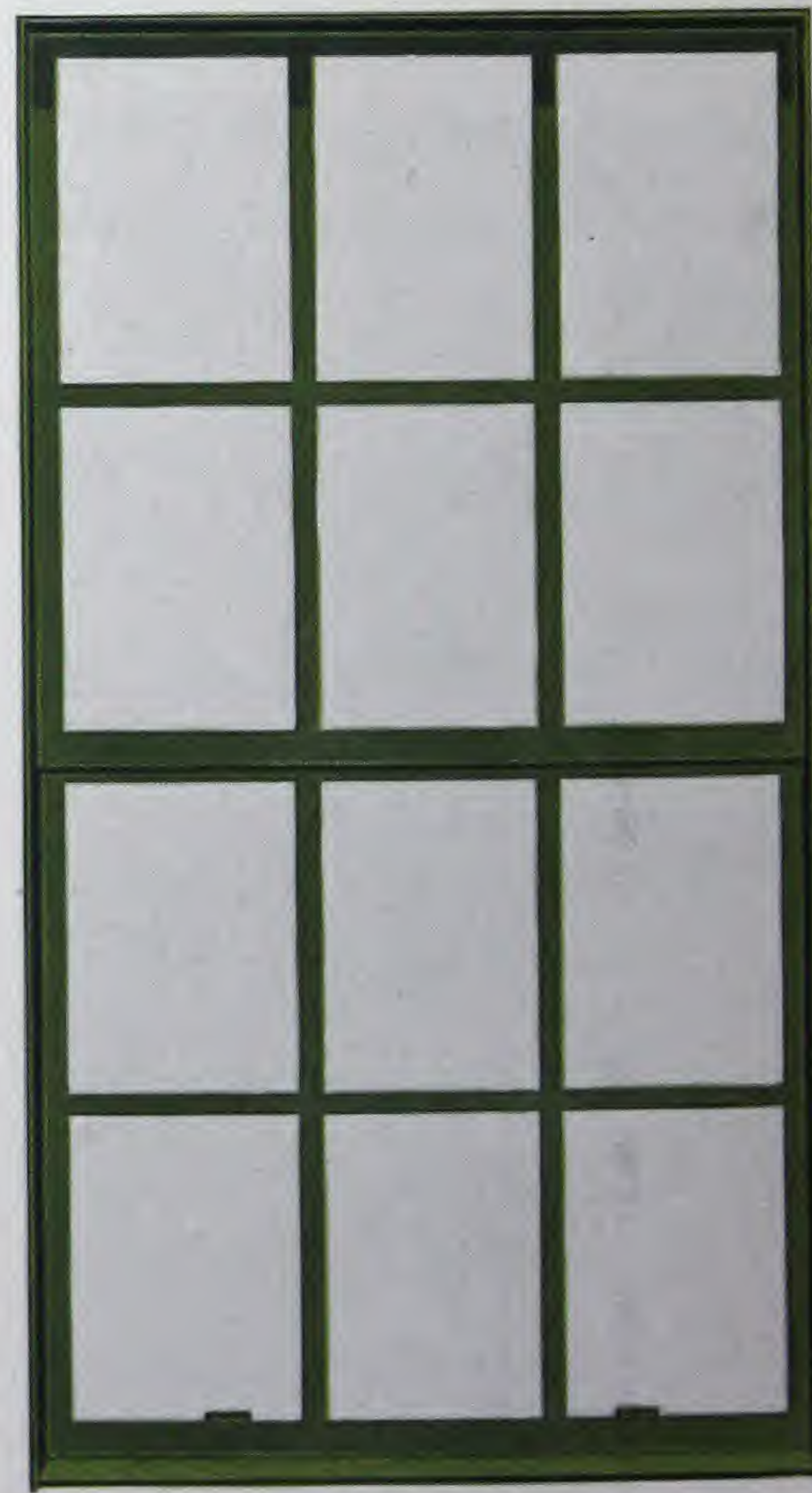
Kawneer windows are shipped with frame and sash assembled and with all finished hardware attached. All the parts such as weights, interior hardware, pulleys and cables or chains are included. The lifts and catch are of special design, the latter being formed so that it draws the upper and lower sash tight with a vertical and horizontal action. Everything about Kawneer Windows is completed at the factory, excepting the actual installations, the hanging of the weights and glazing.



Outside View of Double Hung Type  
with Single Lights



Outside View of Double Hung Type  
with Muntins



Outside View of Double Hung Type with  
Muntins and Cross Bars



## Made to Architectural Sizes in Various Styles

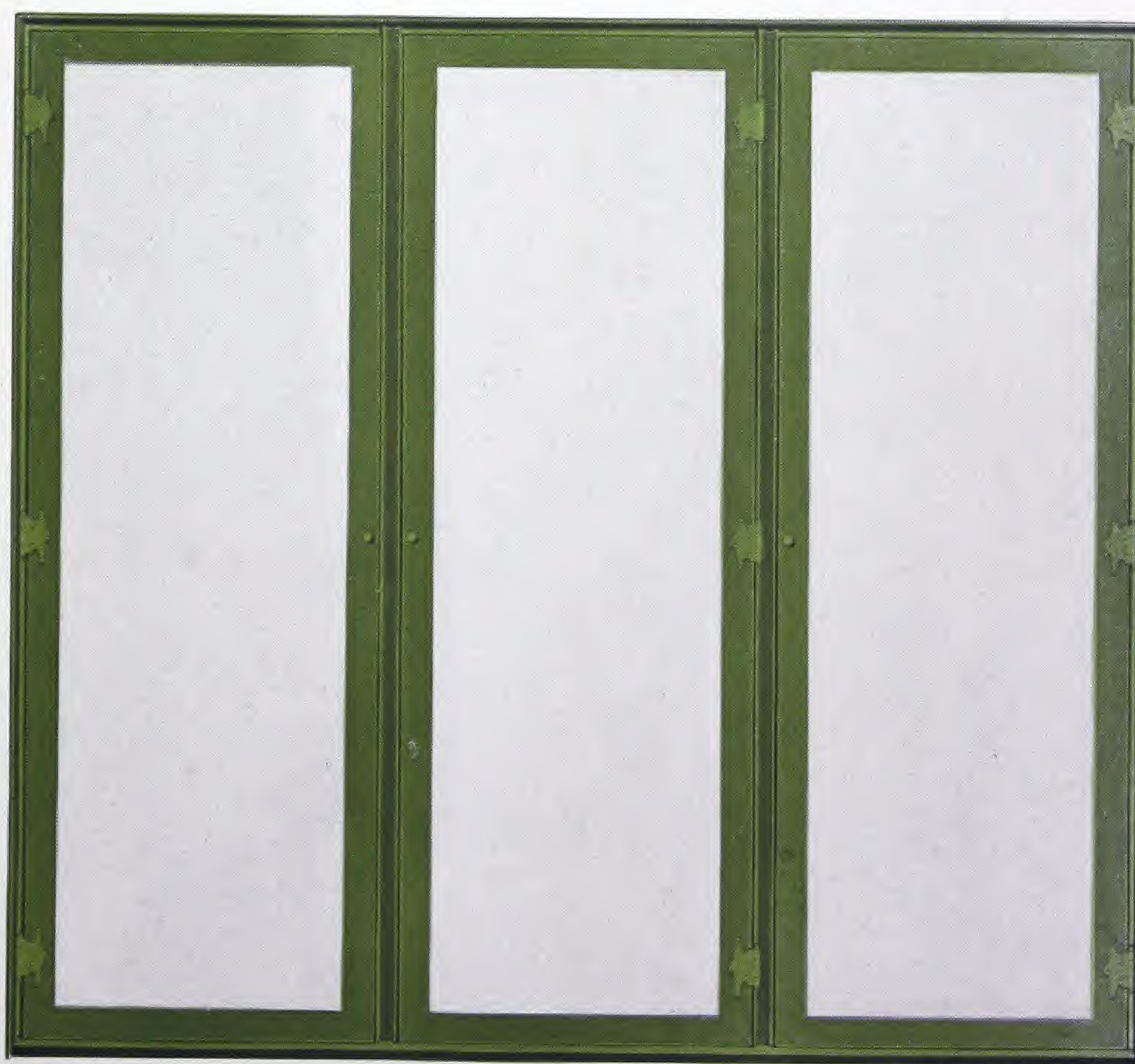
**K**AWNEER Out-Swinging Casements may be had to fit most modern architectural requirements. They are offered in single or double sash, with or without transoms (either stationary or hinged at the top, opening outward). They are made with muntins, if desired, in either sash or transoms or both. Kawneer Casements may also be had in multiples of two sash by the use of specially designed metal mullions. Special arrangements of casements, such as having three sash, the center sash being stationary, or other special combinations, may be had if desired. Kawneer Windows are fabricated to architectural sizes, to fit the masonry wall openings. Models of both types of windows made of full-size sections will gladly be shown upon request.



Outside View, Two Sash Casement Type with Transom



Outside View, Two Sash Casement Type with Muntins

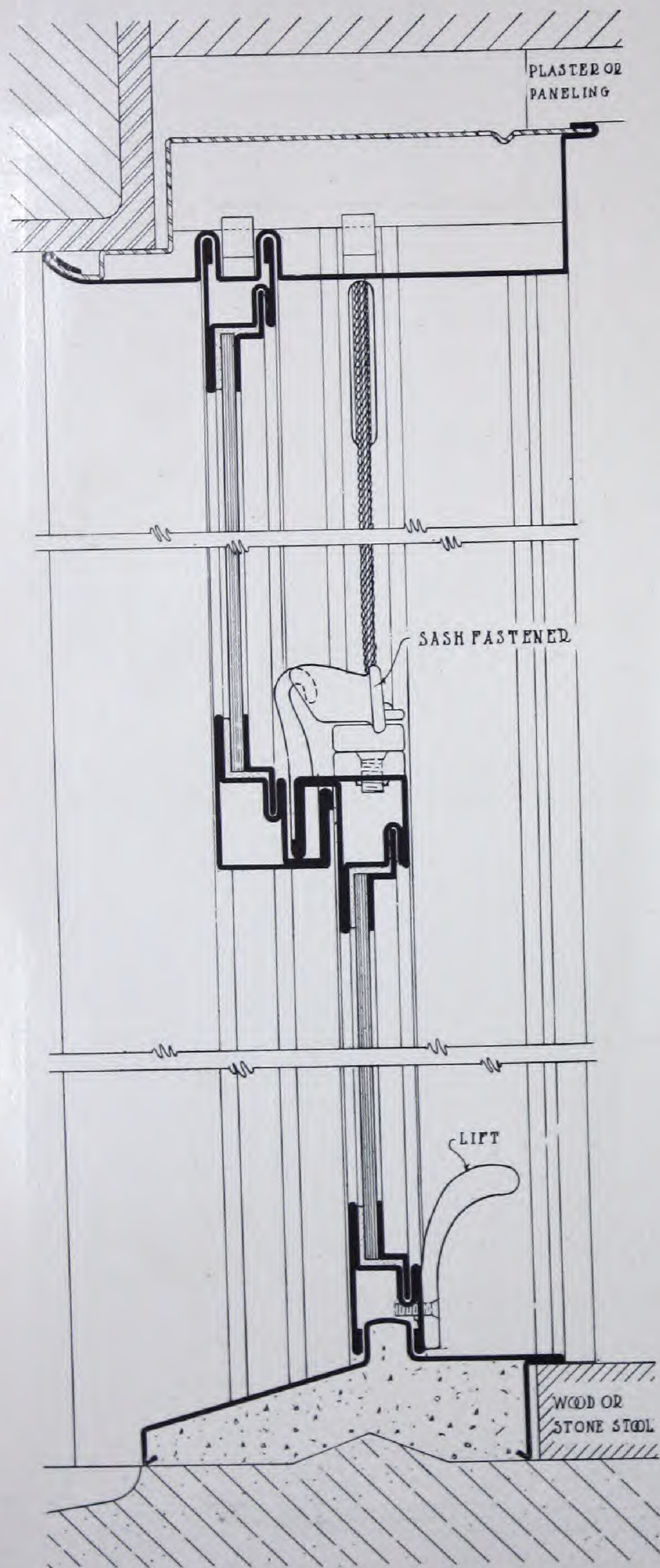


Outside View, Three Sash Casement Type with Mullions

ALL JOINTS STRONGLY WELDED



## Construction Details of Double Hung Type



Vertical Section, Double Hung Type (half size)

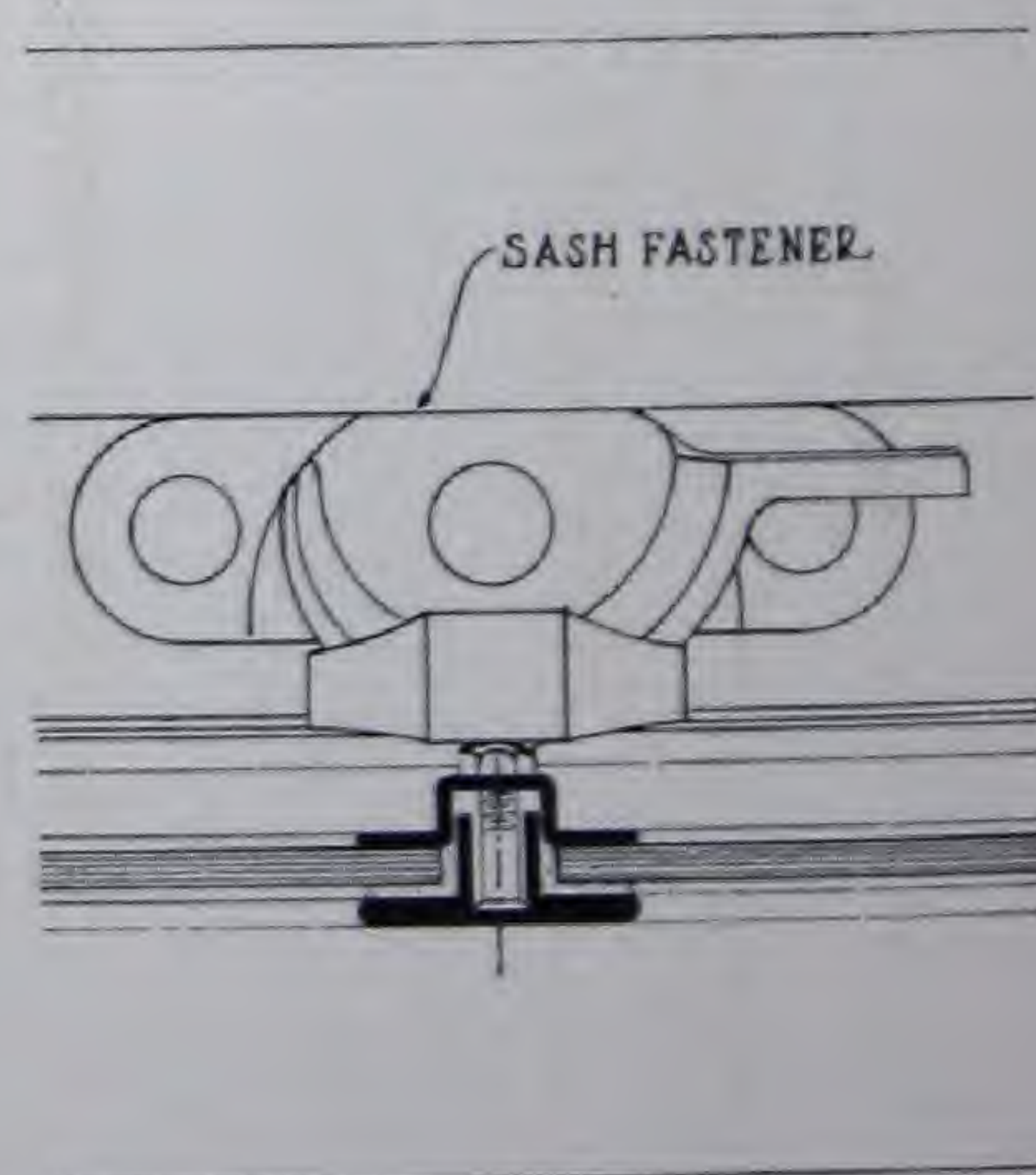
THE basic features of permanency of materials, sturdiness of construction and beauty of design are quite plainly shown in the half size details of Kawneer Windows presented on this and the following three pages. It will be seen that simplicity of design has been adhered to in every feature. It has been our object to make the new Kawneer Windows with as few parts as possible and to use only those features that have been thoroughly tested and proven reliable.

no no

Weather protection is a major feature which affects the serviceability of windows. Note how all of the engaging members of Kawneer Windows are interlocking. The sash rails slide in grooves in the side and engage similar grooves in the head jamb so that any air to seep through either at the jambs or



Sectional View, Sash Member for Plate Glazing (full size)



Sectional View Showing Sash Fastener and narrow Muntin Bar for D. S. A. glazing (one-half size)

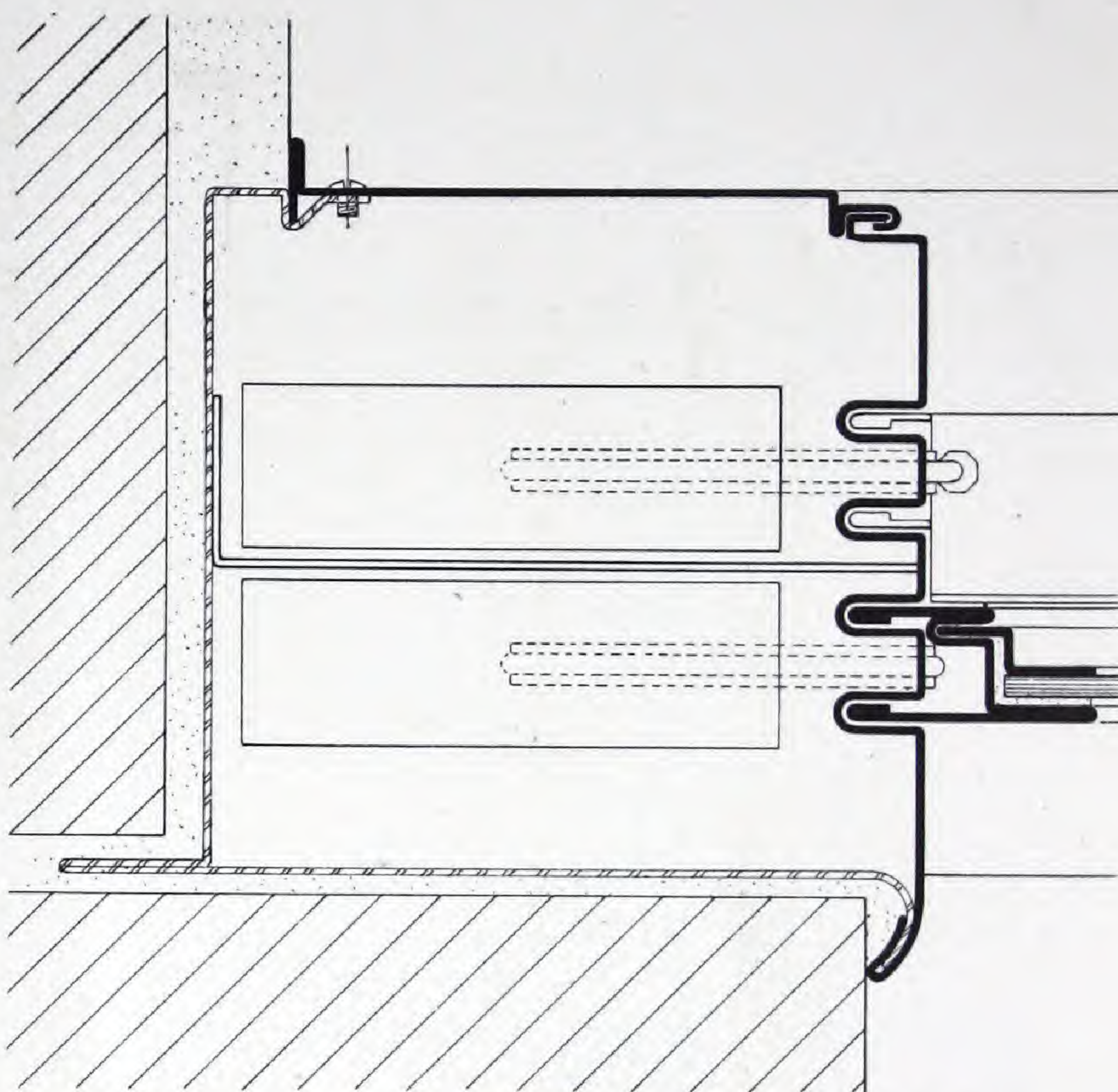


## Engaging Members of Kawneer Windows - Interlocking

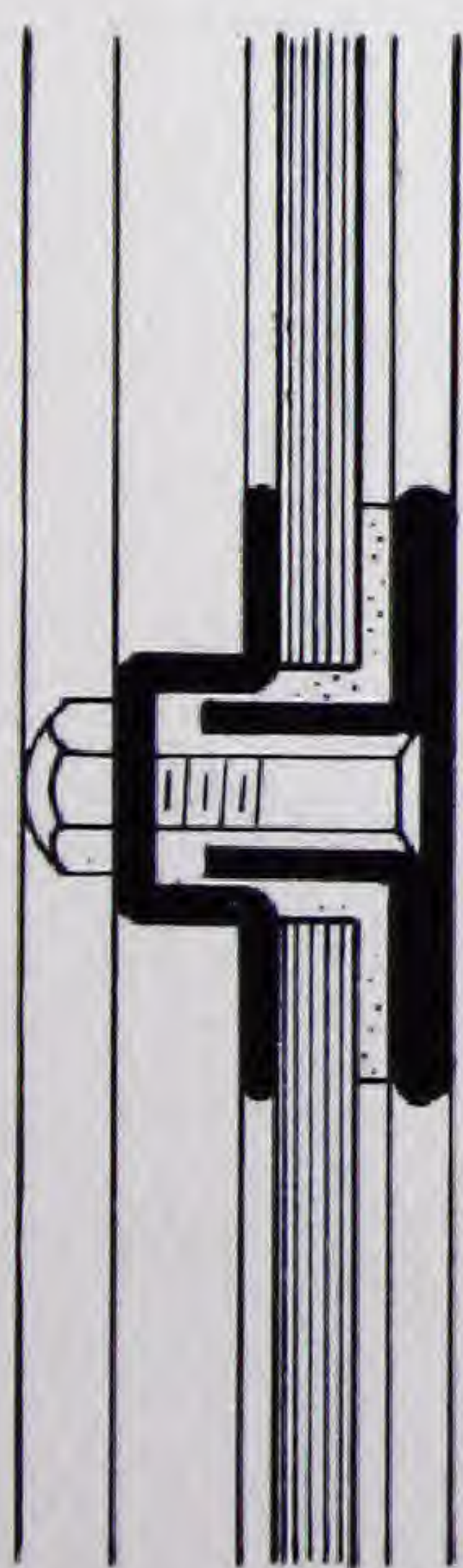
head must make two complete bends, also pass through the air chamber formed by the sash and frame members. The bottom rail of the lower sash fits over an inverted channel shape in the sill which is rolled at a slight taper so that a tight fit is formed when the sash is lowered. At the meeting rails, the sash interlock.

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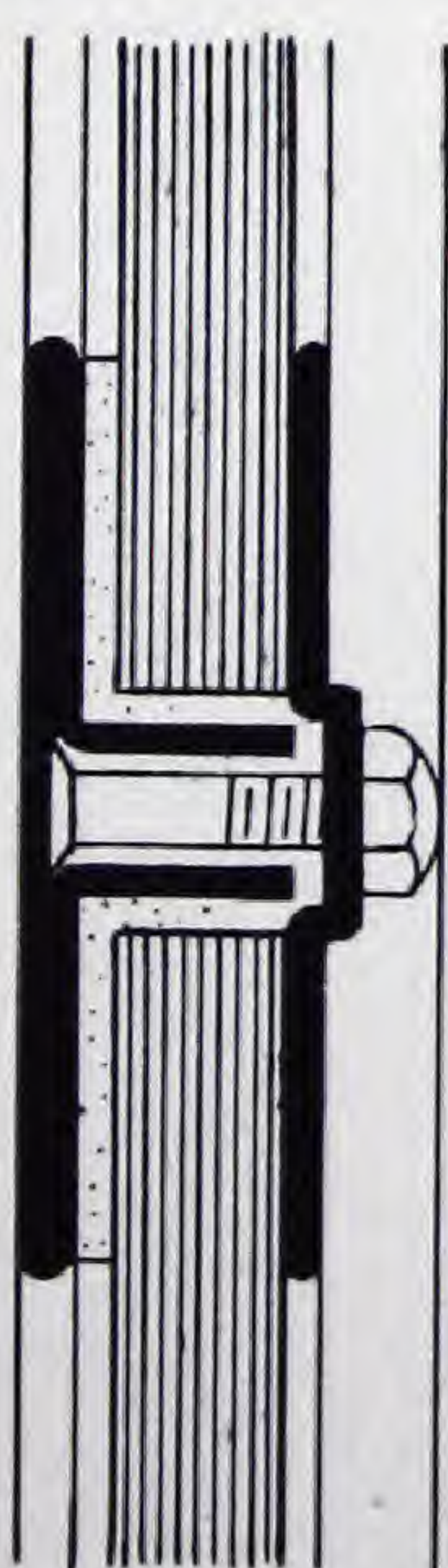
The compact weight pocket is made easily accessible by merely removing two machine screws (in high windows three) and taking off the panel strip on the inside face of the frame. This arrangement eliminates the necessity of slitting the side jamb or removing the sash to get at the weight pocket. Suitable interior hardware is attached to Kawneer Windows at the factory.



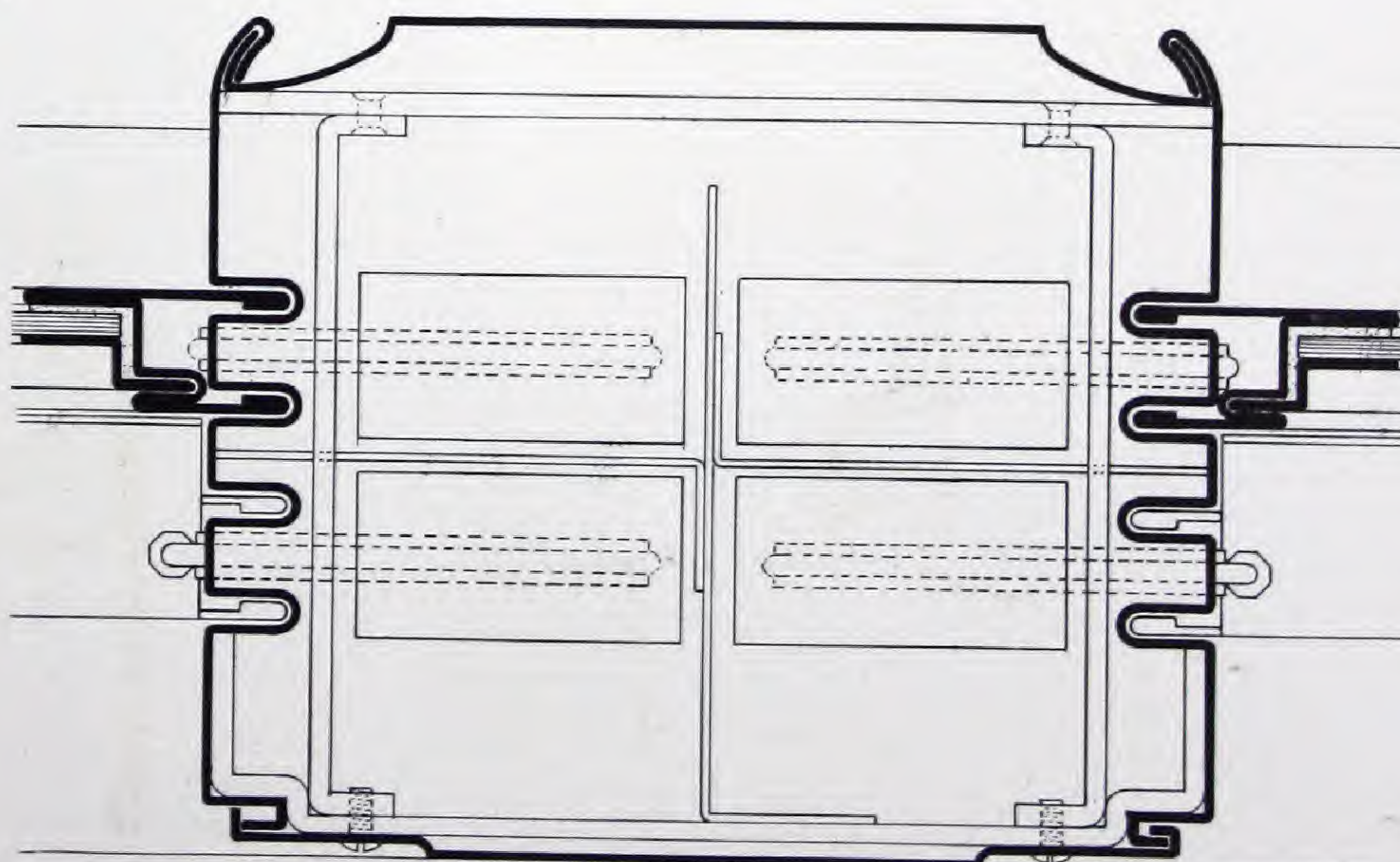
Sectional View of Side Jamb Showing Weight Pocket (half size)



Sectional View of narrow Muntin Bar for D. S. A. Glazing (full size)



Sectional View of wide Muntin Bar for Plate Glazing (full size)

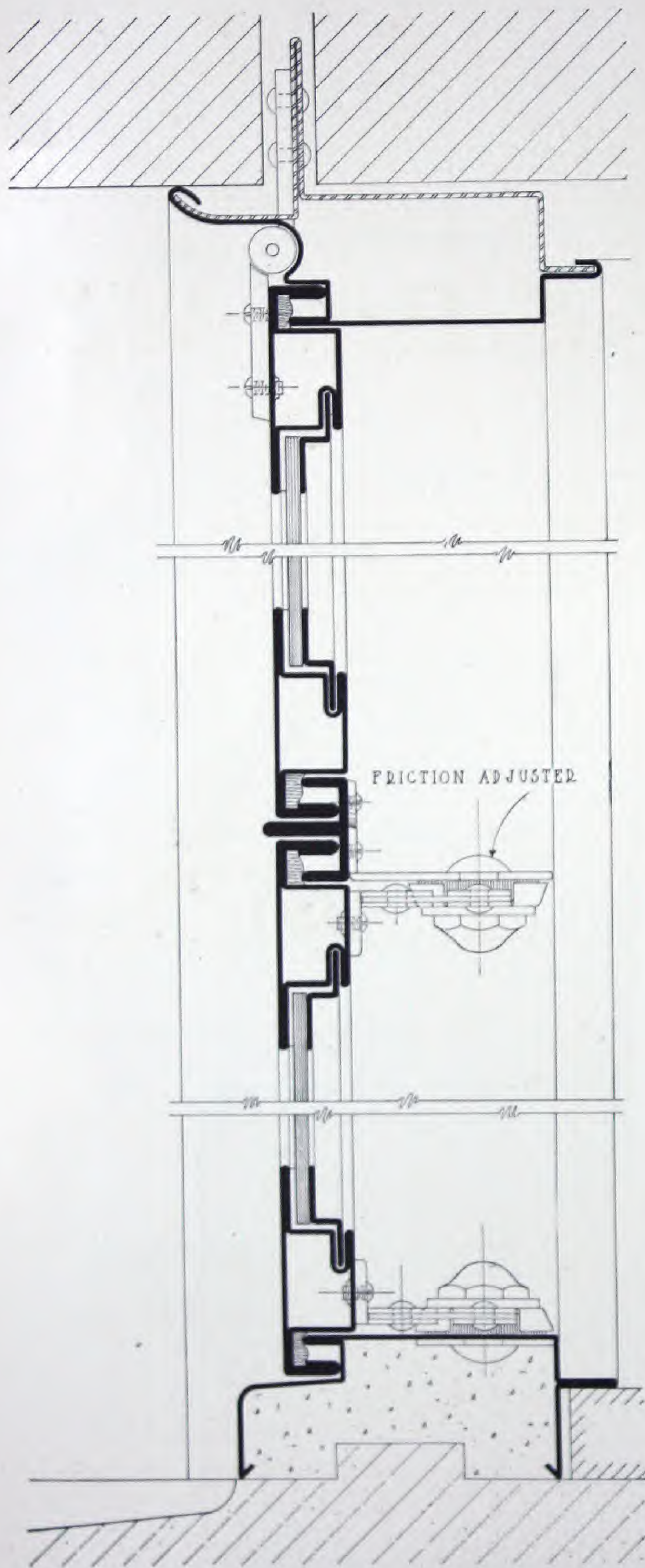


Sectional View of Mullion for Double Hung Type (half size)

ALL JOINTS STRONGLY WELDED



## Construction Details of Casement Types



Vertical Section of Casement Type with Transom (half size)

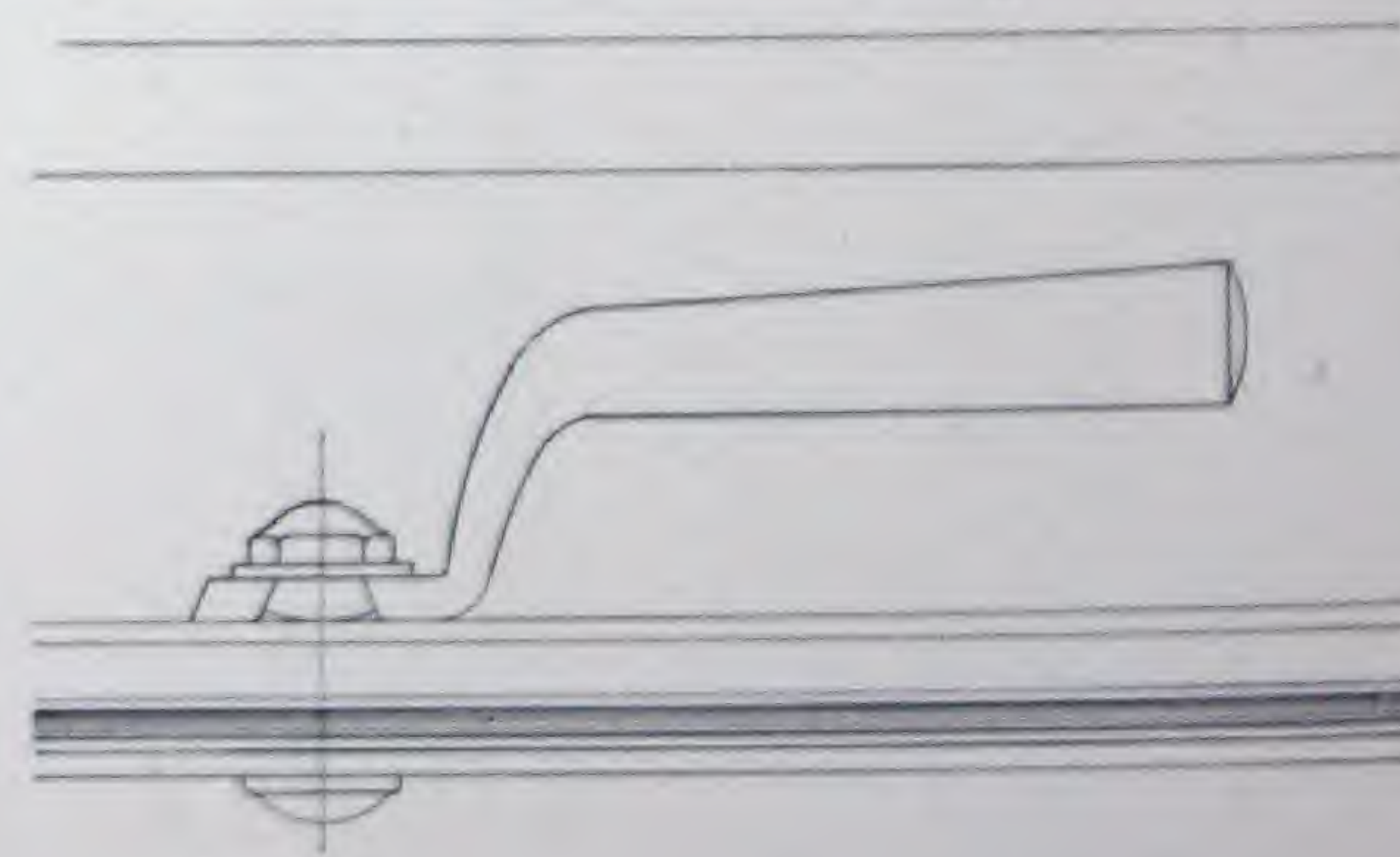
CASEMENTS have the preference for certain types of architectural work. In this country, however, because of the severe weather conditions and the difficulty met in keeping most casements tight this type has not been used as generally as the weight-hung style of windows. With the basic features of Kawneer Windows—permanent materials, heavy gauge metal and specially designed interlocking weather-proofing mouldings—most of the usual objections to the casement type of windows are overcome.

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The half-size details of Kawneer Out-Swinging Casements shown on these two pages, clearly indicate how adequate weathering has been provided by the snug fit of the interlocking, heavy gauge mouldings.



Full Size Section of Sash Member, Casement Type



Sash Fastener, Casement Type



## New Friction Adjuster Holds Casements at Any Angle

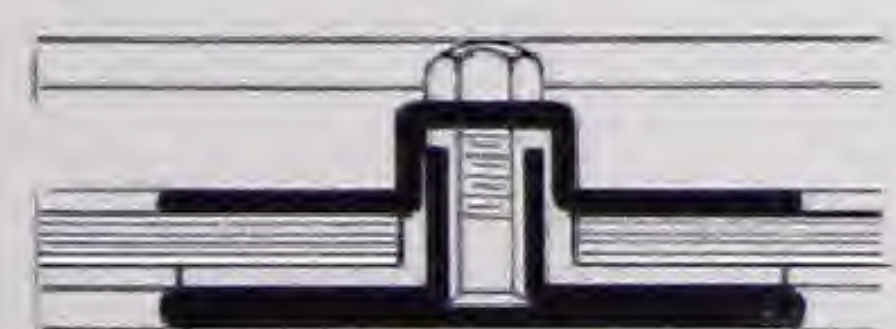
In addition, as an extra precaution to make certain that all casements are absolutely weather tight within all practical limitations, a small strip of all-wool waterproof felt is inserted in the groove of each sash member. When the sash are closed this felt comes in direct contact with the corresponding interlocking frame member, preventing the passage of air or moisture that otherwise might take place.

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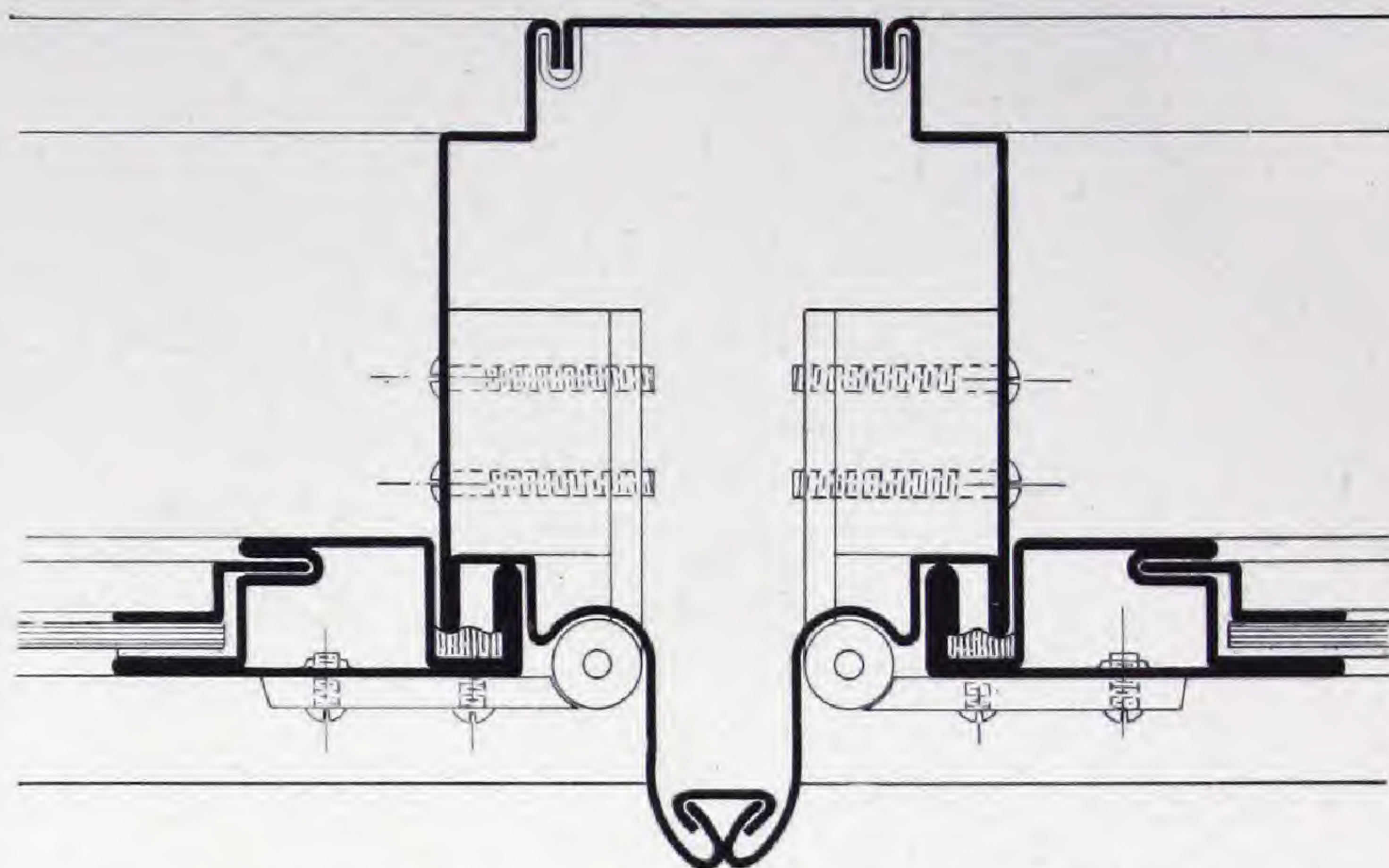
Kawneer Casements are hung on sturdy hinges of ornamental design, so attached as to permit a nearly full outward swing of the sash with adequate support. These sturdy hinges are anchored to reinforcements in the side jambs.

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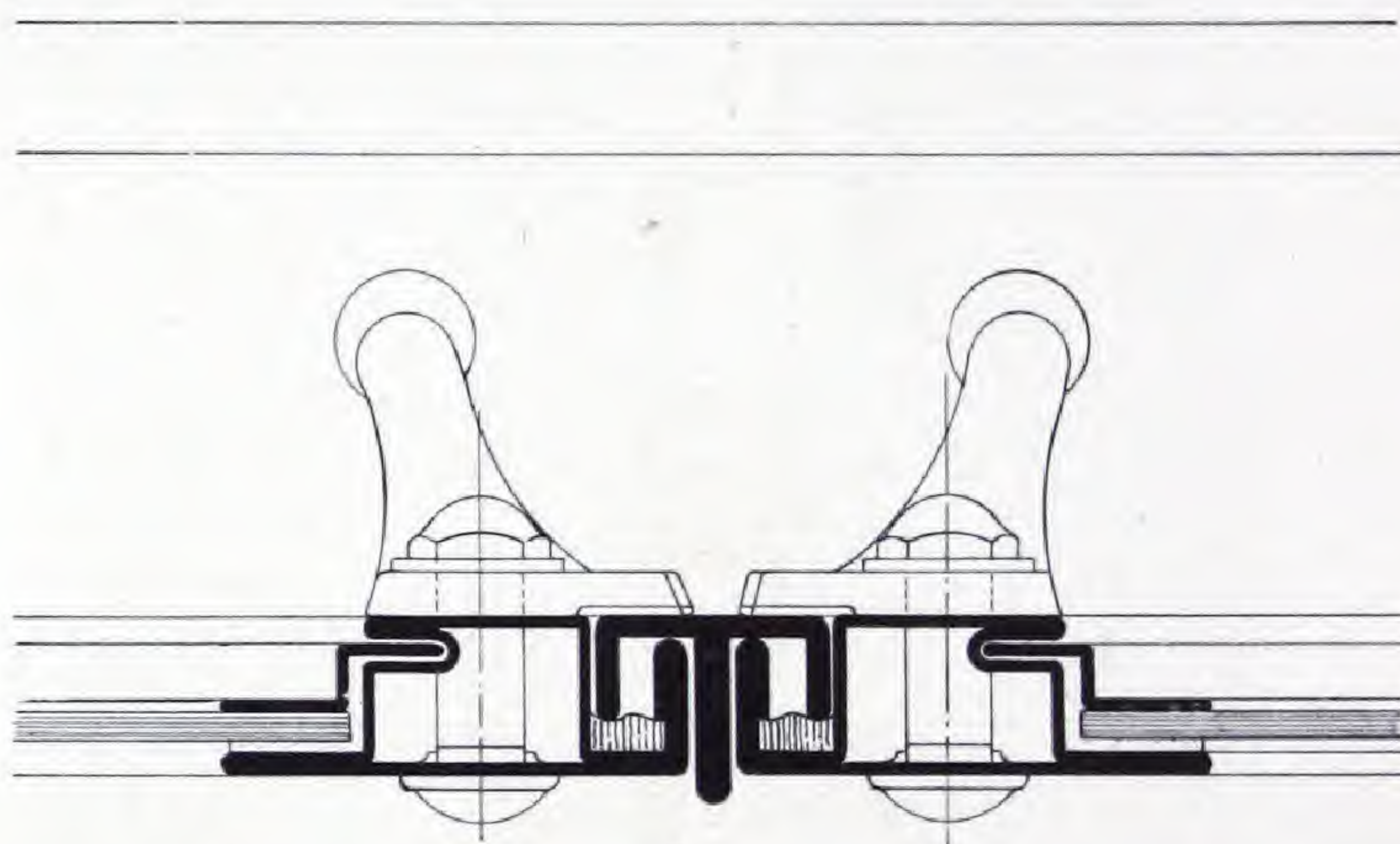
Disk friction adjusters hold the sash securely at any angle. Specially designed fasteners bring Kawneer Casements to a tight fit when closed.



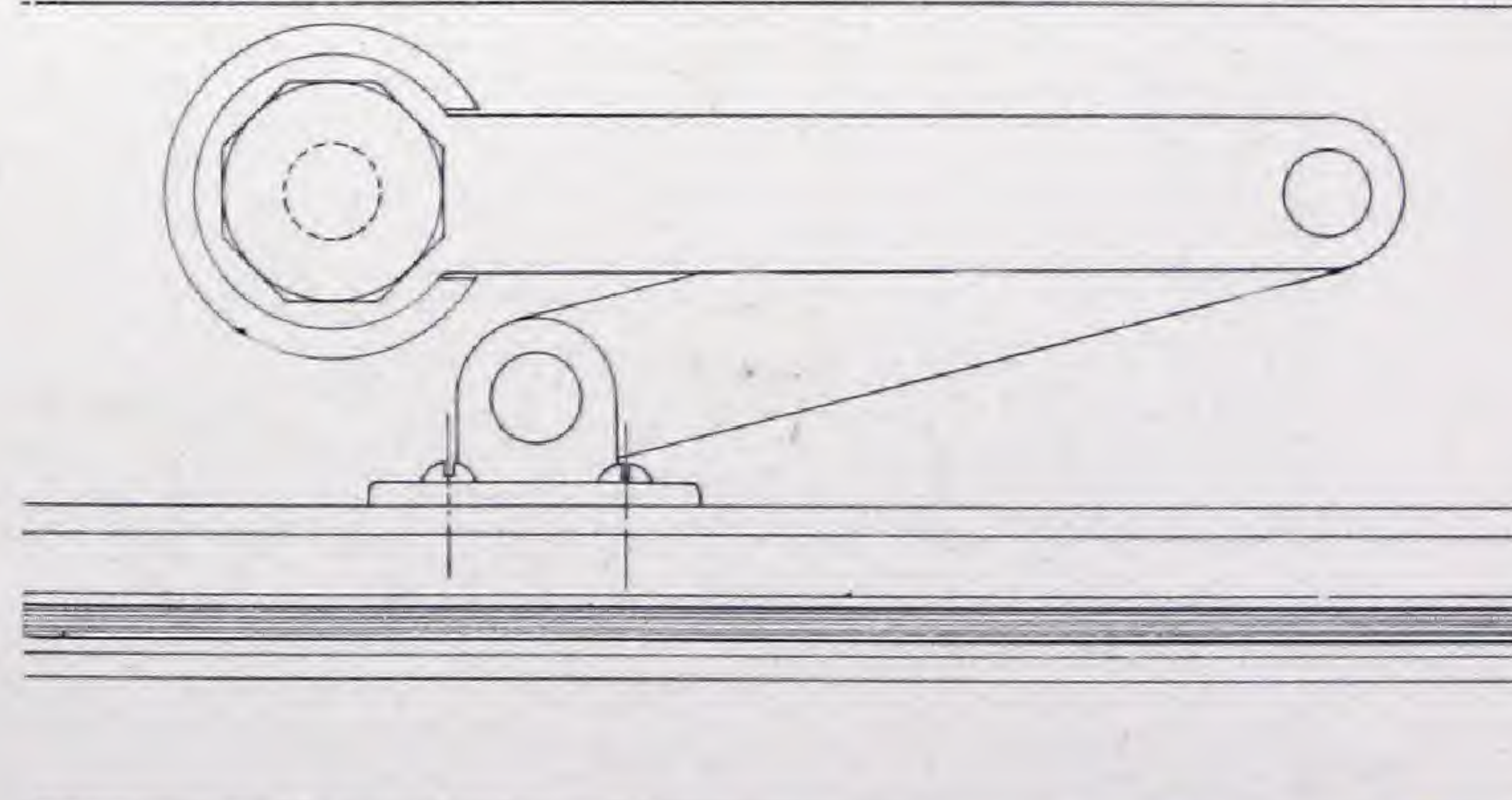
Sectional View of wide Muntin Bar, for D. S. A. Glazing (one-half size)



Sectional View of Casement Type Sash Members with Mullion (half size)



Sectional View of Casement Type Sash Members with Division Bar (half size)



Friction Adjuster, Casement Type





FIRST NATIONAL BANK BUILDING  
Hammond, Indiana

Architectural and Engineering Work by The Weary & Alford Company, Chicago  
144 Kawneer Nickel Silver Window Units

MADE OF COLD ROLLED MOULDINGS



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IN SOLID NICKEL SILVER

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UNITED STATES MORTGAGE BOND COMPANY, Ltd.

Detroit, Michigan

Harry S. Angell, Architect  
212 Kawneer Nickel Silver Window Units

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ALL JOINTS STRONGLY WELDED

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## KAWNEER RUSTLESS WINDOWS



Residence of F. J. Plym

The simple yet well proportioned lines of Kawneer Nickel-Silver Casement Windows in this new home blend harmoniously with the ruggedness of this type of architecture.

This enlarged view of the dining room group confirms the fact that Kawneer Nickel-Silver Windows can be fabricated to meet most architectural requirements.



The Kawneer Company  
Administration Building  
Holabird & Roche, Architects

A fundamental principle of architecture in a building constructed wholly of imperishable material, is that the windows shall be built to endure centuries. This fundamental principle is incorporated in the windows of this building. The double hung type is used on the first floor and the casement type on the second and third.



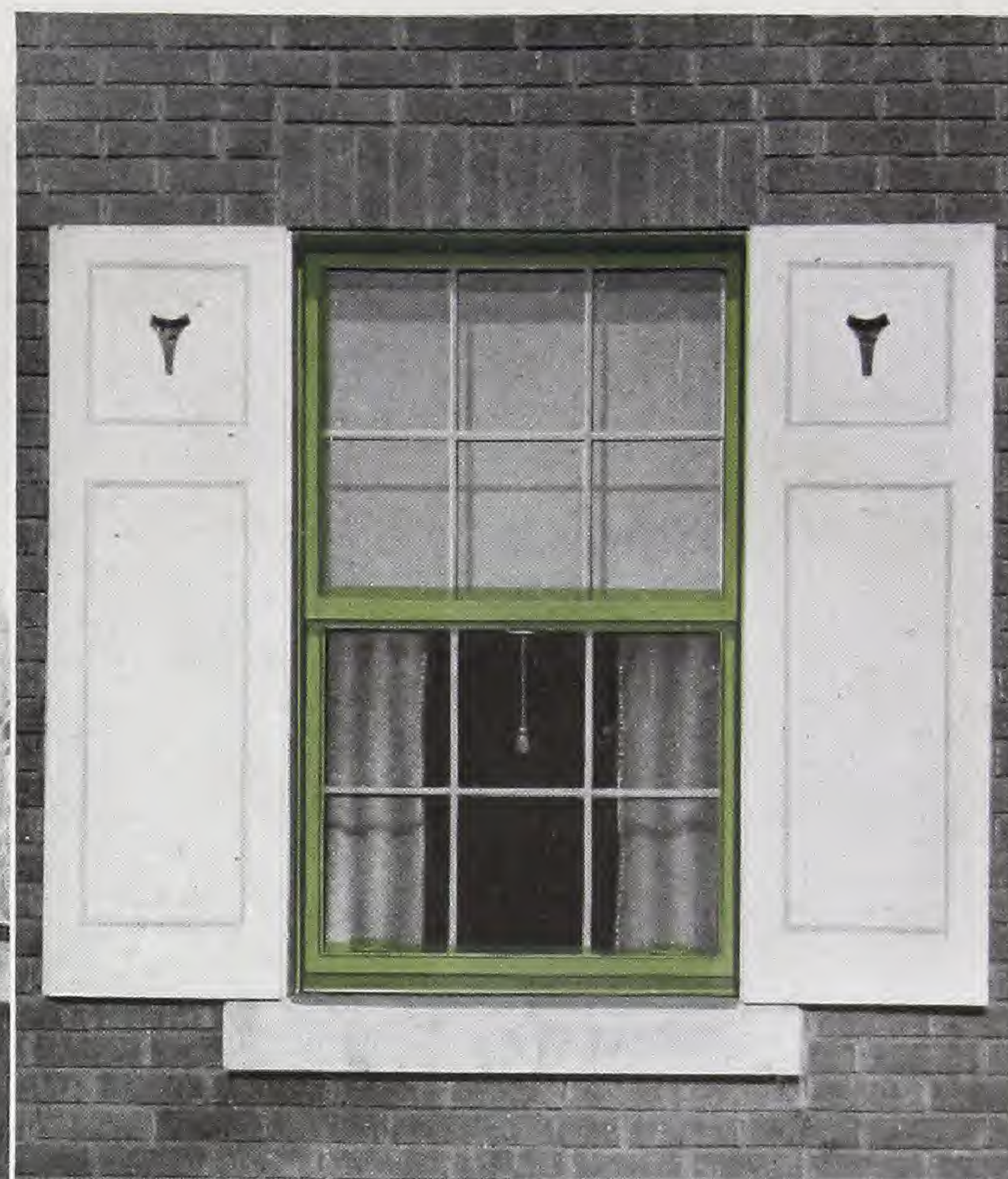
MADE OF COLD ROLLED MOULDINGS



IN SOLID NICKEL SILVER



Residence of H. H. Heimann, Austin & Shambleau, Architects



This enlarged view features how gradual the neat narrow lines of the sash harmonize with the general mass of the building. No attempt has been made to elaborate or accent the lines of Kawneer Solid Nickel-Silver Windows.

The architects extended every effort to make this home beautiful and durable. Kawneer Nickel-Silver Windows were specified and are giving satisfactory service.



Residence of Otto P. Krause, Schlutt Brothers, St. Joseph, Michigan, Architects



This modern home is situated near Lake Michigan on the crest of a long sweeping knoll. The severe attacks of the winter storms have failed to gain access through the interlocking members of Kawneer Solid Nickel-Silver Windows. Durability, perfect weathering, ease of operation and simplicity are contained in Kawneer Nickel-Silver Windows.

ALL JOINTS STRONGLY WELDED



## Specifications for Kawneer Nickel - Silver Casement Windows

ALL Casement Windows shall be as manufactured by The Kawneer Company, Niles, Michigan, and which are known as Kawneer Nickel-Silver Casement Windows.

All exposed parts of these windows are to be made of mouldings rolled of heavy gauge solid Nickel-Silver. Parts which are not exposed, such as the windbreak members at the sides and top, are to be made of mouldings rolled of heavy gauge steel. All such steel parts are to be thoroughly copper plated and painted with red lead.

All finished hardware is to be of Nickel-Silver. This is to include all necessary hinges, friction stays and fasteners.

All corner joints of the sash and frames are to be welded. Mouldings of sash and frames are to be shaped to interlock in such a way as to form a thorough weathering at all places where the sash fit into the frames, transoms or dividing bars. The weathering groove which is rolled in the sash is to be fitted with all-wool waterproof felt so that when sash are closed this felt will come in direct contact with corresponding weathering members of frames, transoms or dividing bars.

All windows are to be built to the exact sizes and detail as shown by these plans and elevations, following the manufacturer's standard practices.

Glass is to be held in place by continuous metal strip which fits into sash member securely without the use of screws or bolts. Glass is to be furnished and installed by glazing contractor.



## Specifications for Kawneer Nickel - Silver Double Hung Windows

ALL Double Hung Windows shall be as manufactured by The Kawneer Company, Niles, Michigan, and which are known as Kawneer Nickel-Silver Double Hung Windows.

All exposed parts of these windows are to be made of mouldings rolled of heavy gauge solid Nickel-Silver. Parts which are not exposed, such as weight pockets, weight pocket separators and wind-breaks are to be mouldings rolled of heavy gauge steel. All such steel parts are to be thoroughly copper plated and then painted with red lead. All finished hardware is to be of Nickel-Silver.

All corner joints of the sash and frames are to be welded. Mouldings of sash and frames are to be so formed that they interlock in such a way as to make a double fin weathering all along the jambs and at the head. The mouldings of the sash are to interlock at the meeting rail and at the bottom with the sill so as to form equally efficient weathering at these two places.

Pulleys shall be the standard product as manufactured by The Kawneer Company. Weights shall be suspended by chain or phosphor bronze cable. Weights shall be either cast iron or lead as may be required to properly balance sash.

All windows are to be built to the exact sizes and detail as shown by these plans and elevations following the manufacturer's standard practices.

Glass is to be held in place by continuous metal strip which fits into sash member securely without the use of screws or bolts. Glass is to be furnished and installed by glazing contractor.



## Produced by the Makers of Kawneer Store Fronts

OVER twenty years ago the first Kawneer store front was installed.

Since this pioneer installation over 260,000 solid copper store fronts made by the Kawneer Company have been installed on the business streets of the nation.

The policy behind the first installation has been carried out in every product of our factories since that time. *The product must give satisfactory service to the user.*

A high reputation for service has been built in this twenty year period by Kawneer Resilient Grip Store Front Construction.

To uphold this reputation a number of months of experimentation and thorough tests were made before this new product, The Kawneer Rustless Metal Windows, was announced.

After completing these tests, we enlarged our factory facilities so as to be able to give prompt deliveries of the new Kawneer Windows when specified on the larger buildings. During the past 18 months Kawneer factory space has been increased 40 per cent.

As a service for architects, special models of both types of Kawneer windows have been prepared. These will be sent for inspection upon request.

THE  
**Kawneer**  
COMPANY  
NILES MICHIGAN

ALSO

Kawneer Sales Offices at

ATLANTA, GA. . . . . 129 Peachtree St.  
BOSTON, MASS. . . . . 6 Beacon St.  
CHICAGO, ILL. . . . . 111 W. Washington St.  
DETROIT, MICH. . . . . 615 Griswold St.  
BUFFALO, N. Y. . . . .

KANSAS CITY, MO. . . . . 903 1/2 Grand Ave.  
MILWAUKEE, WIS. . . . . 490 Broadway  
NEW YORK CITY . . . . . 233 Tenth Ave.  
PHILADELPHIA, PA. . . . . 10 N. Fourth St.  
951 Ellicott Square Bldg.



The Kawneer Company's Factory, Niles, Michigan. Plym Park and Golf Course shows in Background.

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MADE OF COLD ROLLED MOULDINGS

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# Kawneer WINDOWS

IN SOLID NICKEL SILVER OR COPPER

FOR COMMERCIAL BUILDINGS





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